

**AMENDMENTS TO THE CLAIMS:**

The listing of claims shown below will replace all prior versions, and listings of claims in the Application:

1. (Currently Amended) A circuit for a device adapted to receive a conductive solution including charged biological materials control of an output current in a multiple unit cell array, comprising:

an array of unit cells arranged in rows and columns, the array of unit cells disposed on a chip for receiving a conductive solution including charged biological materials, wherein each unit cell comprises:

a first column select CMOS transistor, the first column select transistor being adapted for control by a column selector,

a first row select CMOS transistor, the first row select transistor being adapted for control by a row selector, the first select transistors being connected in series to each other and between a node and a first supply,

an output connected to the node,

a second column select CMOS transistor, the second column select transistor being adapted for control by a column selector,

a second row select CMOS transistor, the second row select transistor being adapted for control by a row selector, the second select transistors being connected in series to each other and between the node and a second supply, and

a return electrode.

2. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the output is directly connected to the node.

3. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the row select transistors and the column select transistors are field effect transistors.

4. (Cancelled)

5. (Cancelled)

6. (Currently Amended) The circuit of claim 51 for control of an output current in an active biological control reaction system wherein the channel length of the column select transistors is larger than the channel length of the row select transistors.

7. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system further including a first test transistor spanning the first supply and the node.

8. (Previously Presented) The circuit of claim 7 for control of an output current in an active biological control reaction system wherein the first test transistor is adapted for control by a test signal.

9. (Previously Presented) The circuit of claim 8 for control of an output current in an active biological control reaction system further including a second test transistor spanning the second supply and the node.

10. (Previously Presented) The circuit of claim 9 for control of an output

current in an active biological control reaction system wherein the second test transistor is adapted for control by a test signal.

11. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the first supply is  $V_{cc}$ .

12. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the second supply is ground.

13. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the first and second column select transistors are controlled under application of a gate voltage from a column shift register memory.

14. (Previously Presented) The circuit of claim 1 for control of an output current in an active biological control reaction system wherein the first and second row select transistors are controlled under application of a gate voltage from a row shift register memory.

15. (Cancelled)

16. (Cancelled)

17. (Previously Presented) The circuit of claim 1 wherein the return electrode is another unit cell.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)